

WHAT IS CLAIMED IS

- 5 1. A smart card connector for receiving a smart card that has contact pads, opposite front and rear edges and laterally opposite side edges, the connector including a housing forming a card-receiving slot that opens rearwardly for receiving the card in movement along a card path when the card is inserted forwardly into the slot, the housing including an insulative support and a plurality of contacts mounted on the support for engaging the contact pads of the fully forwardly inserted card, the connector including a carriage that is slideable in forward and rearward directions on the housing and that is biased rearwardly, wherein :
- 10 said housing forms at least one upstanding rib lying beyond a side of said card path and having inner and outer rib sides;  
said carriage has inner and outer largely vertical flanges lying respectively at inner and outer sides of said rib, and said carriage has a base that connects to said flanges and that lies on top of said rib.
- 5 2. The smart card connector described in claim 1 wherein:  
one of said flanges of said carriage forms a blade with a free end forming a spur for movement into and out of said card path;  
said housing forms a blade-engaging wall that abuts said blade to prevent said blade from deflecting to move said spur laterally into the card path when said carriage lies in a rearward position and to allow said blade to deflect and move said spur into said card path when said carriage lies in a forward position.

3. The smart card connector described in claim 1 wherein the card has a polarizing front corner that extends about 45° to a first of said side edges, and wherein:

5 said carriage is formed of a piece of sheet metal, and has a front that forms a driving branch that extends about 45° to a front direction and lies in the path of the card polarizing front corner, so forward movement of the card causes the card polarizing front corner to push the driving branch and move the carriage forward.

4. The smart card connector described in claim 1 wherein:

said housing includes a sheet metal cover that forms a top wall of said slot;

5 a double click mechanism that includes a cam recess forming cam walls in said support, and a cam follower that has a first end engaged with said carriage and a second end that extends inwardly into said cam recess and that is engaged with said cam walls;

10 said cover has a largely vertical side that forms a leaf with a free end that is biased inwardly and against said cam follower to press said cam follower second end into said cam recess.

5 5. A smart card connector that includes a housing forming a rearwardly-opening slot for receiving a smart card by forward longitudinal sliding of the smart card along a card path that extends along the slot, the housing including a molded insulative support and plurality of contacts mounted on the support, and the connector includes a carriage and a spring that urges said

carriage rearward wherein:

said support forms at least one longitudinally-extending rib; and

said carriage comprises a piece of sheet metal that is bent to form a pair of flanges that straddle said rib and a U-base that connects said flanges, said  
10 piece of sheet metal having a front end forming a driving branch that lies in said card path.

6. The smart card connector described in claim 5 wherein:

one of said flanges forms a blade with a free end that forms a spur that is moveable laterally into and out of said card path, and said support forms a surface that is positioned to deflect said blade to move its spur out of said card  
5 path when said carriage moves rearward.

7. The smart card connector described in claim 5 wherein:

said carriage has a driving branch that extends into said card path, so the card pushes the carriage forward as the card is inserted and the carriage later can push the card rearward.

8. The smart card connector described in claim 7 wherein said card has a polarizing cut corner extending about 45° to the forward direction and wherein:

said driving branch is bent to extend about 45° to the forward direction, to provide a thin driving branch with a face that facewise engages the polarizing  
5 cut corner.

9. The smart card connector described in claim 7 wherein:

said driving branch is a continuation of said U-base, whereby to add strength.

10. A smart card connector for receiving a smart card that has contact pads, opposite front and rear edges and laterally opposite side edges, the connector including a housing forming a card-receiving slot that opens rearwardly for receiving the card in movement along a card path that extends  
5 along the slot when the card is inserted forwardly into the slot, the housing including an insulative support and a plurality of contacts mounted on the support for engaging the contact pads of the fully forwardly inserted smart card, the connector including a carriage that is slideable between forward and rearward positions on the housing and that is biased rearwardly, wherein:

10 said carriage has a main carriage part and has a blade with a fixed end merging with said main carriage part, said blade having a free end forming a spur for interacting with a first of the card side edges;

said housing forms a blade-engaging wall that engages said blade in at least one of said carriage positions, so said blade does not deflect to move said  
15 spur laterally into the card path when said carriage lies in a rearward position but said blade does deflect to move said spur into said card path when said carriage lies in a forward position.

11. The smart card connector described in claim 10 wherein:

20 said blade is biased toward a position wherein said spur extends into the card path and said blade-engaging wall engages said blade in said carriage rearward position.

12. The smart card connector described in claim 10 wherein:  
said blade-engaging wall pushes said blade free end towards said card  
path in said carriage forward position.

13. The smart card connector described in claim 10 including said  
card, and wherein:

5 said housing includes a groove and said blade has an actuating finger  
that lies in said groove, said groove having a ramp wall that allows said  
actuating finger to move toward said card path as said carriage moves forward,  
a rear portion of said ramp forming said blade-engaging wall.

14. The smart card connector described in claim 10 wherein:  
said carriage comprises a piece of sheet metal that has been bent into a  
largely U-shape that forms inner and outer largely vertical flanges and a U-base  
that connects upper ends of said flanges;

5 said housing forms at least a first primarily vertical ribs, said carriage  
straddling said rib with said inner and outer flanges lying respectively inward  
and outward of said rib and said U-base lying on top of said rib.

15. The smart card connector described in claim 10 wherein:  
said housing forms a second rib that lies forward of said first rib, with a  
gap between a front end of said first rib and a rear end of said second rib;  
one of said flanges of said carriage forms said blade with said spur, said  
5 spur lying between said ribs in both forward and rearward position of the  
carriage.